1. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{144}} + \sqrt{4}i$$

   A. Rational

   B. Not a Complex Number

   C. Nonreal Complex

   D. Pure Imaginary

   E. Irrational

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2. Simplify the expression below and choose the interval the simplification is contained within.

$$19 - 11^2 + 20 \div 7 * 13 \div 17$$

   A. $[141, 142.7]$

   B. $[-104.1, -101.6]$

   C. $[136.5, 141.4]$

   D. $[-100.3, -98.1]$

   E. None of the above

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3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(8 + 6i)(2 + 3i)$$

   A. $a \in [-12, -1]$ and $b \in [-45, -33]$

   B. $a \in [33, 39]$ and $b \in [9, 15]$

   C. $a \in [14, 21]$ and $b \in [17, 23]$

   D. $a \in [33, 39]$ and $b \in [-13, -3]$

   E. $a \in [-12, -1]$ and $b \in [35, 40]$

4. Simplify the expression below and choose the interval the simplification is contained within.

$$19 - 9^2 + 8 \div 5 * 4 \div 20$$

    A. $[-61.93, -61.53]$

    B. $[100, 100.05]$

    C. $[-62.15, -61.94]$

    D. $[100.18, 100.45]$

    E. None of the above

5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{65}}{18} + \sqrt{-2}i$$

    A. Nonreal Complex

    B. Not a Complex Number

    C. Pure Imaginary

    D. Rational

    E. Irrational

6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-72 - 55i}{-7 + 3i}$$

    A. $a \in [11, 12]$ and $b \in [1.5, 3]$

    B. $a \in [4.5, 7.5]$ and $b \in [600.5, 602.5]$

    C. $a \in [338.5, 339.5]$ and $b \in [9.5, 12]$

    D. $a \in [10, 11.5]$ and $b \in [-19, -17.5]$

    E. $a \in [4.5, 7.5]$ and $b \in [9.5, 12]$

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7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(3 - 10i)(-5 + 8i)$$

    A. $a \in [63, 66]$ and $b \in [72, 75]$

    B. $a \in [-17, -12]$ and $b \in [-84, -79]$

    C. $a \in [63, 66]$ and $b \in [-74, -69]$

    D. $a \in [-102, -92]$ and $b \in [24, 29]$

    E. $a \in [-102, -92]$ and $b \in [-31, -22]$

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8. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{121}{324}}$$

    A. Integer

    B. Whole

    C. Rational

    D. Not a Real number

    E. Irrational

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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{36 - 88i}{2 + i}$$

    A. $a \in [17.5, 18.5]$ and $b \in [-89, -87]$

B. $a \in [-4.5, -2]$ and $b \in [-213, -211]$

C. $a \in [31, 33.5]$ and $b \in [-29.5, -27.5]$

D. $a \in [-4.5, -2]$ and $b \in [-43, -41.5]$

E. $a \in [-16.5, -15.5]$ and $b \in [-43, -41.5]$

10. Choose the **smallest** set of Real numbers that the number below belongs to.
$$\sqrt{\frac{3600}{36}}$$

A. Irrational

B. Whole

C. Integer

D. Not a Real number

E. Rational